

Summary

Nine fatal cases of acute suprarenal insufficiency occurring in pregnancy are described in which death was apparently due to acute suprarenal insufficiency.

The history of these cases was similar to that described in similar conditions in non-pregnant patients by other authors.

The symptoms of these patients were classified into four groups as described by Arnaud (1900), Lavenson (1908), and Simpson (1937).

The predisposing factors in the cases described appeared to be obstetric shock, pre-eclamptic toxæmia, or late vomiting of pregnancy.

In some cases the pathological lesion was thrombosis of the central veins without destruction of the gland substance, and it is suggested that in these cases the lesion may not be irreparable.

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TREATMENT OF PLANTAR WARTS WITH ELASTOPLAST AND PODOPHYLLIN

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We believe that in recent years there has been a considerable increase in the incidence of plantar warts, though we have no certain evidence of it. Table I shows the increasing numbers of cases seen at the skin department of Edinburgh Royal Infirmary in certain years.

TABLE I.—Cases of Plantar Warts Seen at the Skin Department, Royal Infirmary of Edinburgh, in 1936-8 and 1948-50

Year	Cases	Year	Cases
1936	58	1948	168
1937	68	1949	205
1938	105	1950	209

Over 200 cases were seen in 1950, and undoubtedly considerable numbers were also treated by chiropodists, medical practitioners, and consultants in private. Plantar warts are thus common enough to present a problem to every practitioner. They may produce considerable disability, the pain giving rise to a limp and bad posture.

If they are left untreated other members of the household may contract the infection, the spread taking place, presumably, from the bathroom floor. Most of the juvenile patients are regular attenders at swimming-baths, which appear to be the main disseminators of the infection.

Since the war much has been written on the dangers or the advantages of the usual methods of treatment of plantar warts. These are in the main radiotherapy, curettage, diathermy, and chemical methods. Their multiplicity indicates that they all have their limitations or shortcomings.

The reports of plastic surgeons (McLaughlin, 1948; Shaw, 1948) on the dreadful sequelae following improper treatment with x rays may have aroused prejudice against radiotherapy. This method should be reserved for the solitary wart or for one which is a reasonable distance from others. The mosaic wart—that is, many small warts grouped closely together—should not be treated with x rays, and multiple warts should be attacked preferably by other methods.

Diathermy and curettage, or curettage alone, may give good results in the hands of an expert, but the injection of the local analgesic may be rather painful, even with preliminary freezing with ethyl chloride, and there is usually much subsequent discomfort. It is therefore unsuitable for children, who comprise the majority of patients (Table II). The frequent use of general anaes-

TABLE II.—Distribution by Age Groups of 209 Patients With Plantar Warts Seen in 1950

Age	No.	Age	No.
0-4	6	15-19	32
5-9	34	20-24	18
10-14	97	25 and over	22

thesia is difficult to arrange in a busy out-patient department.

The surgical excision of plantar warts usually results in a painful scar, which is often the site of a recurrence. This method should be avoided as a routine procedure.

Various treatments with salicylic plasters and caustics have been described, and are applicable to solitary, multiple, or mosaic lesions. Such measures are often extremely painful, necessitate frequent visits over a long period, and are by no means uniformly successful.

With the introduction of the formalin method (Thomson, 1943) we have the first simple treatment for all types of plantar wart; this is particularly suitable for use in general practice. A fair number of cures can be obtained, but the disadvantage of the method is that the results depend entirely on the thoroughness with which the patient carries out the treatment.

Present Investigation

The treatment described here is equally simple, has proved in our hands more efficient than the formalin method, is applicable to all types of wart, and can be used after failure with x rays, surgery, or any other method. By successful treatment we mean here the removal of the substance of the wart followed by an examination three weeks after cessation of treatment to see that no trace remained. Patients were then instructed to report back in the event of any recurrence of symptoms. The "elastoplast" series was completed in October, 1950, and the elastoplast and podophyllin series in January, 1951.

The effects of elastoplast on warts have previously been noted. McAusland (1935) cured two cases of warts on the hands by elastoplast occlusion. Bateman (1942) applied this method to plantar warts and cured nine of seventeen cases: the average duration of treatment was about three to four months. Encouraged by this, we extended this treatment to the majority of plantar warts. The results can be seen in Table III.

TABLE III.—Cases Treated with Elastoplast Only

	Duration of Treatment in Weeks									Total
	2	4	6	8	10	12	14	16	18	
Cases cured	0	15	9	18	6	6	2	3	1	60
Cases failed										17
No follow-up										13
Total ..										90

The 17 cases classed as failures fall into two groups. Eight cases had less than two months' treatment with elastoplast before a change of treatment was instituted; this comprised curettage or freezing with carbon dioxide snow, and was used to obtain a more rapid cure. The remainder of the failures were truly resistant, and were treated for more than three months without any benefit.

A study of the histology of the plantar wart will explain the rationale of elastoplast treatment. Its structure is the same as that of a verruca vulgaris. There is considerable elongation of the dermal papillae, with corresponding downgrowth of the rete pegs, which incline inwards at the base and give rise to a cauliflower appearance. In the plantar wart this lies beneath the surface and is usually covered by a thick horny cap, often with a surrounding ring of hyperkeratosis. If this cap can be completely removed pain is relieved and the body of the wart becomes vulnerable to attack by chemicals.

The removal of hyperkeratosis by paring with a knife is very temporary; it soon re-forms. If, however, after paring, the lesion is immediately occluded with elastoplast, any remaining horny material is macerated and its regrowth often prevented. The tenderness of the lesion decreases and its vitality is impaired. If occlusion is maintained continuously for some weeks, a fair proportion, especially multiple small warts, disintegrate. In other cases the papillomatous base becomes visible. This rather resembles a condyloma acuminatum, which is, after all, only a common wart macerated by the natural bodily secretions. It therefore seemed likely that the application of 25% podophyllin in liquid paraffin might be of value. This was in fact shown by Kurtin and Yontef (1948), who first suggested this type of treatment for plantar warts. Their technique consisted of paring down the lesion until bleeding occurred, stopping the oozing with pressure, applying podophyllin, and then covering with adhesive tape to macerate the wart and keep the podophyllin in place. This was repeated at intervals of eight days, and produced 60% of cures.

Podophyllin has proved a very useful adjuvant, and we now use it in all the more resistant cases. It is unlikely to be effective unless the filiform processes of the wart are exposed and it can be absorbed into the body of the lesion. Some four to six weeks' occlusion with elastoplast is usually required before conditions favourable to the use of podophyllin are produced.

Table IV shows the result of this combined treatment. Of the first 40 cases 37 have been cured and three have failed to respond to treatment.

TABLE IV.—Cases Treated with Elastoplast and Podophyllin

	Duration of Treatment in Weeks										Total
	2	4	6	8	10	12	14	16	18	Over 18	
Cases cured ..	0	2	6	10	4	7	4	1	2	1	37
Failed ..											3
Total ..											40

Technique

If the wart has a horny surface it is pared down as far as possible without causing bleeding. If a very sharp detachable scalpel blade is used the lateral pressure on the wart causes little discomfort. Elastoplast is then applied, starting on the dorsum of the foot and carrying it right round and overlapping. When a lesion on the heel is occluded a turn is taken round the ankle. The patient is instructed to report again in two weeks. On the second visit any debris is gently scraped from the surface of the wart, any necessary paring of the wart and surrounding hyperkeratosis done, and the elastoplast reapplied. This is repeated at intervals of two weeks. If the wart does not come away at the second or third visit, podophyllin is started. A small quantity of 25% suspension in liquid paraffin is rubbed in with a glass rod, any surplus dabbed off with wool, and elastoplast applied; paring, podophyllin, and elastoplast are then repeated at intervals of one to two weeks.

If the wart is actively growing and is found to project above the skin surface when the elastoplast is removed, weekly treatment is preferable.

The pressure of the elastoplast on the wart seems an important factor. Lesions on the areas of maximum pressure respond most readily. Warts near the base of the toes may be difficult to macerate and should be covered by a narrow strip of elastoplast extending from the dorsum of the foot and passing between the toes, and then by a band round the foot.

The disintegration of a large wart may be indicated by the sudden onset of tenderness, and when the lesion is pared there is often a discharge of serous fluid, and the centre of the lesion can be pulled out to reveal a red granulating base.

Irritation of the skin on the dorsum of the foot is sometimes produced by the elastoplast, but severe reactions requiring cessation of treatment are uncommon. When a reaction has occurred and the continuation of treatment is desirable, protection of the dorsum of the foot can be afforded by gauze or lint placed between the affected area and the elastoplast.

Podophyllin can produce a severe primary chemical dermatitis and it is also a powerful sensitizer. Little trouble, however, occurs on the thick skin of the sole. It should be used with extreme caution elsewhere, and the skin surrounding each wart should be protected before it is applied.

We have tried the effect of podophyllin on periungual warts on the fingers, after maceration, but owing to the risk of reactions we now prefer to use elastoplast alone in most cases.

Conclusions

The successful treatment of plantar warts requires a knowledge of the special applications and limitations of several methods of treatment. Expert radiotherapy is the treatment of choice for the solitary lesion. In the event of failure with this, or when it is not available, or

in the case of multiple or mosaic warts, it is necessary to resort to treatments of lower efficiency but of wider applicability. Elastoplast occlusion falls into this category; it is safe and is applicable to all types of plantar warts, and certainly deserves to be more widely known.

With this treatment 60% of our cases were cured within two months. This suggests that it should be used as a preliminary treatment.

The series of cases treated with podophyllin and elastoplast shows a higher percentage of cures, but the duration of treatment is about the same. It is emphasized that the podophyllin will not act unless it can be brought into contact with the filiform processes of the wart. It is thus an adjuvant, the main therapeutic agent being the elastoplast. It is possible that as further experience is gained a place will be found for other agents, such as CO₂ snow, liquid air, or formalin bathing, to complete the cure in cases which show a slow response to elastoplast.

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Medical Memorandum

A Case of Typhoid Osteitis Treated with Chloramphenicol

The following case, in which a discharging sinus in the left tibia following typhoid fever was successfully treated with local chloramphenicol after oral chloramphenicol had failed, may be found of interest.

Case Report

An Indian seaman, aged 23, was admitted to the tropical ward of Sefton General Hospital on October 4, 1950, complaining of a painful swelling of the left shin of one week's duration. He said that he had had typhoid fever in Calcutta two years previously, and that three months after leaving hospital he had developed a swelling of his left shin similar to the one of which he now complained. This had broken down and discharged pus. It had been treated with rest and fomentations, and had healed after one month. Thereafter he had remained well and at work till the present recurrence.

On examination a small sinus discharging pus was found at the front of the lower third of the left tibia. The surrounding area was swollen, painful, and tender. The scar of the previous breakdown was seen close to the sinus. Physical examination was otherwise negative. A radiograph of the tibia showed a small area of decalcification in relation to the sinus. Culture of the pus yielded a mixed growth of *Staph. pyogenes* and *Salmonella typhi*, Vi-phage type C. The patient's serum agglutinated *Salm. typhi* H and *Salm. paratyphi* A H at a dilution of 1 in 25 and failed to agglutinate the other standard salmonella suspensions. Repeated cultures of blood, urine, and faeces were negative for typhoid bacilli.

On October 24 a ten-day course of oral chloramphenicol was begun. It consisted of an initial dose of 4 g. followed by 0.5 g. six-hourly. No change in the patient's condition

resulted, and cultures taken one week after the course still yielded *Staph. pyogenes* and *Salm. typhi*. On November 27 the sinus and underlying bone were cleaned out surgically, but the wound continued to discharge typhoid bacilli. A second similar course of chloramphenicol from December 15 to December 24 was equally unsuccessful in sterilizing the infection.

On December 29 it was therefore decided to apply chloramphenicol locally, and the contents of one capsule (0.25 g.) were introduced into the sinus daily for 15 days, by which time the wound had healed soundly. The patient was discharged from hospital on February 7, 1951, and was symptom-free when last seen as an out-patient one month later.

Comment

The treatment of intestinal or biliary typhoid carriers with chloramphenicol has been almost uniformly unsuccessful; thus Woodward, Smadel, and Ley (1950) report the complete failure of the drug to cure the four chronic carriers in whom it was tried. In all four carriers *Salm. typhi* did not disappear from the faeces, but it disappeared from the bile during treatment and reappeared shortly after the antibiotic was discontinued. (See also Douglas, 1950; Nina, 1950; Collins and Finland, 1949; Minkenhof, 1949; Rumball and Moore, 1949.)

The only other published case of typhoid osteitis treated by this antibiotic is that of Morse and Geiser (1950), who, writing of a case of typhoid osteomyelitis of the humerus, remark that response was not dramatic but was followed eventually by a cessation of all manifestations during a follow-up period of five months. As the patient had had a previous symptom-free interval of six months it is clear that a permanent cure was not definitely established.

The present case falls into line with the intestinal carriers as regards the failure to respond to oral chloramphenicol. That the local application of chloramphenicol caused the healing of the sinus cannot be said, but it would seem to be a rational procedure in the case of readily accessible typhoid lesions.

I would like to express my thanks to Dr. A. R. D. Adams, under whose care the patient was treated, and to Dr. Carl Brundret for the laboratory investigations.

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During 1950 140 British nurses had appointments arranged for them in hospitals abroad, and similar arrangements were made for 260 foreign nurses to work in hospitals in England and Scotland (*Report for 1950*, Royal College of Nursing). Approximately 300 nurses from the Dominions visited the College, and many were helped to find work in hospitals. During the summer many British nurses went abroad with letters of introduction to nurses' associations, and were able to see how hospitals in Europe and Scandinavia are organized.